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**“Strengthening African higher education through the dissemination of
research content: the role of the library.”**

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Introduction

In the age of globalization, the knowledge economy discourse has become a way to characterize the new relationship between higher education, the state and society and, the economy. In this scenario, the output by higher education institutions becomes increasingly important for the international competitiveness of a nation through excellence in the generation, application and dissemination of knowledge.

The importance of higher education for growth and development of a nation is confirmed by **Kofi Annan who asserts that “the university must become a primary tool for Africa’s development in the new century. Universities can help develop African expertise; they can enhance the analysis of African problems; strengthen domestic institutions; serve as a model environment for the practice of good governance, conflict resolution and respect for human rights, and enable African academics to play an active part in the global community of scholars”**

However, that international competitiveness or the catalyst for growth and development is nullified as research output or the generation of new knowledge from Africa, is alarming low. One of the significant factors stifling Africa’s generation of new knowledge is the lack of, *inter alia*, access to quality and relevant research publications.

UNESCO, in responding to the need for higher education to contribute to the growth and development of the continent state **that “at no time in history has it been more important to invest in higher education as a major force in building an inclusive and diverse knowledge society and to advance research, innovation and creativity.**

The past decade provides evidence that higher education and research contribute to the eradication of poverty, to sustainable development and to progress towards reaching the internationally agreed upon development goals, which include the Millennium Development Goals (MDGs) and Education for All (EFA). The global education agenda should reflect these realities.

Stellenbosch University's Hope Project

Stellenbosch University, recognising its obligation as one of the leading research universities on the continent and one of the many catalyst for growth and development on the continent, conceptualised and adopted the HOPE Project. There is great synergy between the assertions of Kofi Anan and UNESCO and, the HOPE Project.

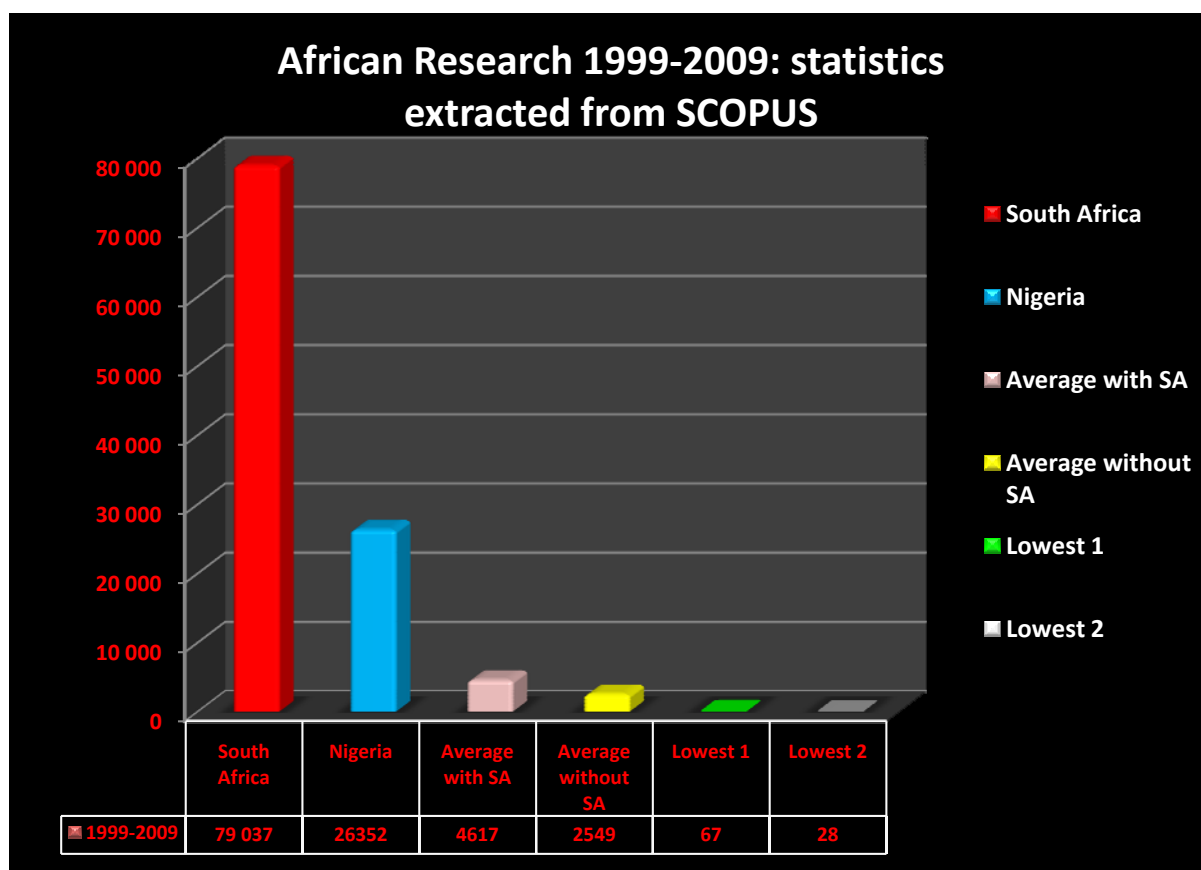
The University's HOPE Project is about doing world-class research on local, regional and African challenges in state-of-the-art facilities with the best expertise available, while providing the best opportunities for learning and the growth of a new generation of thought leaders. Through this HOPE Project, the University supports the international development agenda by focusing some of its key academic and research programmes on:

- Eradicating poverty and related condition
- Promoting human dignity and health
- Promoting democracy and human rights
- Promoting peace and security
- Promoting a sustainable environment and a competitive industry

Given that these development themes underpin academic initiatives at Stellenbosch University and its concomitant research output, it must be accepted that Stellenbosch University is committed to producing new knowledge to overcome African development issues. I will come back to this later.

Research in Africa

According to the French Académie des Sciences (2006) the research output of Sub-Saharan Africa is about 0.7% of the world's output. Compounding this low output is poor access to this output. Lor (2000) and Swindell (2007) point out that the combination of these two negatives has contributed to Africa's growing unemployment and widespread poverty and backlogs in social services such as education and health. They go on to state that this lack of access to relevant information has contributed to Africa's isolation from the global economy.



In the period 1999-2009, Africa has produce just over **170 000** items that appear on SCOPUS and as can be seen from the graph, South Africa produces 66% more than the second place Nigeria. However, the more significant issue is what percentage of this research output is available to researchers on the African continent. How much of this is locked away in exorbitant subscription costs. Libraries, as significant contributors to the generation of new knowledge, have an obligation to strengthening the African higher education space by developing forums that will improve access to information for researchers to manipulate in the generation of new knowledge.

However, as asserted by Cullen (2004), Kavulya (2006) and Raju (2009), Africa's university libraries are under resourced and underutilized, they are facing a crisis that, though seemingly quiet, has the potential to affect the continent's intellectual capital for decades to come. The libraries, in the main, are characterised by low numbers of books per student, inadequate journals subscriptions and limited access to electronic information, which has led to libraries being unable to adequately support teaching, learning and research activities in universities. This trend is exacerbated by continuously declining budget levels adding to the inability of university libraries to satisfy the growing demand for education.

It can be inferred from the graph that those countries that are high producers of research are the ones that have greater access to scientific output as there is a direct and positive correlation between access to old knowledge and the generation of new knowledge. It is beyond debate that access to authentic and trusted information is critical for the generation of new knowledge; therefore, it is absolutely imperative that academic institutions invest in

developing good libraries to ensure that their libraries are empowered to contribute to the growth of new knowledge.

New opportunities to strengthen African higher education through the dissemination of research content

The revolution in Information Communication Technologies (ICTs) and the emergence of the Open Systems movement (Open Source and Open Access) have presented opportunities for African institutions to change the publishing landscape to one that suits their needs and affords them a competitive edge in the scholarly world. Katebire (2008) states that the various activities and functions associated with publishing can be revolutionized by the power of the Internet.

It must also be borne in mind that open access and institutional repositories are fast becoming the preferred way of disseminating research output. Given the tremendous proliferation of journals and many of them, especially those published by commercial firms, are out of reach for libraries even in the West, not to mention the poorer countries, African libraries must utilise technology to harvest the myriad of resources that are available. African libraries and researchers must use the same technologies to make their research available to the developed nations as Africa has much to share with the developed world.

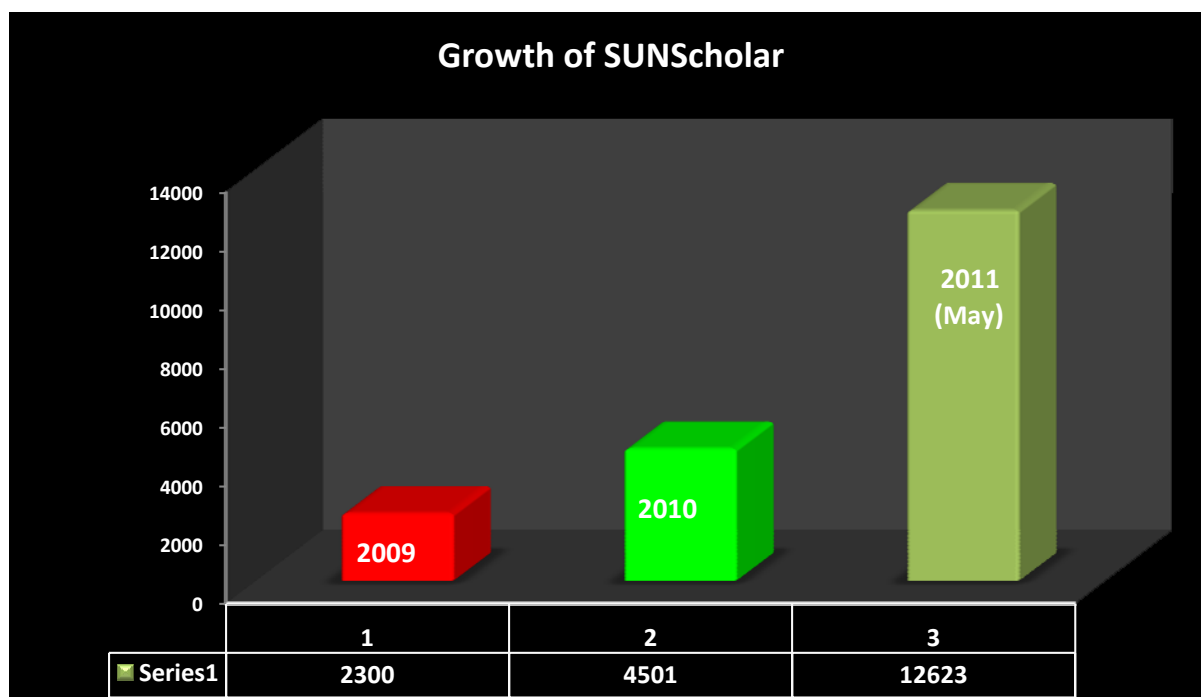
Essentially, open access is literature that is in digital format, available online, free of charge, and free of most copyright and licensing restrictions. There is an explicit removal of price barriers (subscriptions, licensing fees, pay-per-view fees) and permission barriers (most copyright and licensing restrictions). Combined, open access journals and institutional repositories, constitute open access. Access via both these sources allow for the harvesting of a multitude of resources that is available free and accessibly remotely and without time constraints. The removal of barriers to end-user-access improves the visibility of the research output.

In an era of easy access to open source software, there are sufficient opportunities for libraries to utilize open source software to enhance their role in collecting, organizing and disseminating the research output of their respective institutions. Academic institutions in developed countries are exploiting open source software in the development of their repositories. The question that begs an answer is why African academic libraries are not vigorously taking up opportunities that are presented by these open source software. Further, a new role for the 21st century academic library is that of engaging in publishing processes, again, using open source software such as Online Journal Systems.

Stellenbosch University Exploiting New Opportunities

Stellenbosch University is vigorously taking up the opportunities that current and relevant technology presents in driving its quest to leave a scientific footprint on the African continent. In response to the Institution's ambition to leave a scientific footprint, the Library has exponentially grown its institutional repository (SUNScholar). The Institution's commitment to sharing its research output with researchers on the African continent and the rest of the world is demonstrated by its signing of the Berlin Declaration on Open Access to

Knowledge in the Sciences and Humanities in October 2010 – the first African University to do so. *The Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities*, issued in 2003 by international research, scientific, and cultural institutions, promotes the Internet as a medium for disseminating global knowledge. It has been signed by the leaders of nearly 300 research institutions, libraries, archives, museums, funding agencies, and governments from around the world.



The graph provides evidence of the growth of Stellenbosch University's institutional repository. As can be seen from the first graph, there is a substantial number of research articles that are produced by South African higher education institutions. A significant contributor is Stellenbosch University. The Library at Stellenbosch University is investing a great deal of energy to make the full text research output available via its repository to Africa.

Collaboration for the generation of new knowledge

The significant issue is that Stellenbosch University and many of the other institutions of higher education are already creating spaces, via repositories, to strengthen higher education in Africa. However, this forum is under utilized to share research output. What needs to be debated, explored and adopted is how institutions can collaborate and cooperate in accelerating the growth of repositories at African higher education institutions. There are many models that can be explored to exploit this forum – one model would be for the AAU to take responsibility and contribute to the purchase of appropriate hardware and for institutions with the necessary skills to manage the growth and development of African higher education repositories. Another model would be for institutions with established repositories to host mirror repositories for those institutions that are lacking the expertise. When the expertise level is of an acceptable standard, the guest institution can relocate the repository to its local site. A third of many models is that of a continental repository.

The creation of repositories is one forum to share research output to strengthen African higher education. Developed countries are feeling the strain of exorbitant cost of subscriptions. As a direct result if these exorbitant cost and coerced by increased visibility of research, aided and abetted by technology, academic libraries are publishing journals using open source software. The philosophy underpinning this transformation is that scholarly information is published more for the benefit of society than the generation of income. There is a willingness of the authors of research to submit their articles free of charge and the willingness of editors and referees to peer-review the articles also without a fee attached. Scholars publish their research in peer-reviewed journals not for financial, but for professional gain. Costs are incurred in printing and publishing the journals, rather than in the payment of royalties or fees to the writers or editors.

In the spirit of openly sharing publish research information with minimum cost to the end user but retaining the scholarly element, libraries are engaging in publishing journals using open source software such as Online Journal systems. Stellenbosch University is piloting publishing Stellenbosch University hosted journals via OJS. When these titles are published, they will become accessible to any user that has access to the internet. The significant issue is that local journals with critical local content become accessible to those that need it the most to generate new knowledge. The mere changing of format converts local titles to internationally accessible journals. Critical content languishing in small libraries or offices of professors now become available to the entire continent to help strengthen higher education in Africa.

Conclusion

Stellenbosch University, through its HOPE Project, has the ambition to contribute to addressing the MDGs and to contribute to the development of the continent. The University is cognizant that it has to invest in its Library to achieve this ambition. The Library, in its quest to contribute to the University's ambition, has experimented with relevant technology to share the Institution's research output with the rest of the continent and the world. The Library has also invested significant resources to develop processes to publish research material using OJS.

There are other exemplars of libraries playing significant roles in sharing research output. It is incumbent on the leadership of academic institutions to develop strategies that foster collaboration and cooperation for the sharing of research. This collaboration and cooperation must include the sharing of hardware and skills to strengthen African higher education.

Open access, be it via institutional repositories or publishing using OJS, is fast becoming the norm for sharing research output. Africa needs to get onto the open access bandwagon. As indicated earlier, Stellenbosch University is committed to the development of the continent and in the spirit of developing a strong African research space, I would like to take this opportunity to invite you and your institutions to utilize the skills and other expertise located in the Library at Stellenbosch University.

In closing, on behalf of Stellenbosch University, I would like to invite you and your staff to attend the Berlin 10 Open Access Conference which will take place at Stellenbosch in October/November 2012. The Berlin Open Access Conference Series convenes leaders in the science, humanities, research, funding, and policy communities around *The Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities*. Berlin 10 is the first of the annual meetings to take place in Africa.

Thank you!

30 May 2011

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